Edison Portland Cement Company Records
Plant Operations Notebook, N-99-07-01.2

This notebook is a continuation of N-99-07-01.1. It was used by Edison for notes and calculations relating to operations at the Stewartsville works during the period July 1905-February 1906. The entries concern plant capacity and losses in time. The front cover is marked "Cement." The pages are unnumbered. Approximately 60 pages have been used.

N-(99-07-01.2)

208) 800 (4

137
260
61
36
23
159

20) 676

137
260

	Items	Minutes
Cars stuck on switch incline	3	13
	3	12
	1	3
	2	25
	1	5
	1	10
	1	4
	1	19
	1	10
	1	14
	1	4
	1	3
	2	7
	1	8
	20	137
Cars off track	1	98
	1	25
	[illegible]	[illegible]
	1	40
	1	63
	1	5
	1	13
	1	16
	7	260

	Item	
Cars stuck foul [illegible],	2	8
	1	3
	1	7
	1	14
	1	19
	6 -	61

Cars run over switch	1	9
	1	7
	1	5
	1	4
	1	4
	1	7
	6 =	36

Cars refused Couple & uncouple	1	7
	1	5
	1	4
	1	3
	1	4
	5	23

	Item	
Track blocked with Coal Cars	1	63
	1	62
	1	24
	3 -	159

All proceeding
loss daily of 6
3,5 minutes

~~Waiting for Rock~~

Item	
~~5~~	~~157~~
~~5~~	~~116~~
~~4~~	~~9[illegible]~~
~~2~~	~~125~~
~~5~~	~~133~~
~~1~~	~~160~~
~~8~~	~~238~~
~~3~~	~~113~~
~~3~~	~~185~~
~~6~~	~~140~~
~~8~~	~~602~~
~~3~~	~~243~~

~~3~~	~~199~~
~~2~~	~~157~~
~~5~~	~~155~~
~~3~~	~~110~~
~~1~~	~~20~~
~~8~~	~~220~~
~~2~~	~~58~~
~~1~~	~~170~~
~~4~~	~~74~~
~~6~~	~~162~~
~~1~~	~~17~~
~~1~~	~~30~~
~~1~~	~~95~~
~~2~~	~~19~~
~~3~~	~~154~~
~~3~~	~~61~~
~~5~~	~~327~~
~~3~~	~~13~~
~~6~~	~~210~~
~~7~~	~~173~~
~~3~~	~~136~~
~~8~~	~~201~~
~~3~~	~~254~~
~~7~~	~~261~~
~~2~~	~~145~~

Waiting for rock -

356
285
278
406
161
542
739
817
527
676
1137
749
988
1452
754
820
971
837
656
13151

1246
1176
425
346
649
524
695
603
318
1300
582
434
344
439
651
413
428
66
711
842
303
12497

600) 1500 (2

60) 180 (3.
120
600

July 1st To Feby 1

11111111
26
9
206

13151
12497
25648 (6

40) 25648
240
64

600) 25648 (42.7
2400
1648
1200
4480

208..

208) 25648 (123
208
484
416
688
624

9
7 9

10
9
11

Waiting Rock -

Total loss 25648 -

208 working days -

Loss average daily

123 minutes -

Which at rate of 180 tons hours

3 tons min or

123
3
369 - tons daily loss Capacity

All other losses do not Exceed 4 minutes daily or loss of 12 tons daily -

CP Waiting speed -

72
41
65
64
56
22
51
37
50
45
50
28
32
36
41
59
48
12

809

208)809

Giants -

5
4
368
272
45
29
313
21
37
10
20
34
125
23
44
59
74
29
35
89
78
15
37
18
48
7
475
10

Feby 17

196 Days -

196)2324(minutes lost
11.8
196
364
196
1680
1568

11.8 minutes daily
3
35.4 tons lost

1111111

26
7
172
14
196

)2324

14
10

1st 36

25
345
83
38
25
14
20
121
15
43
21
117
253
98
59
24
25
130
103
10
1472

196 days) 1472 (7.5 minutes lost
1372
1000
1

7.5 minutes lost daily

7.5
3
22.5 tons

8
6

2nd 36

132
86
47
64
30
22
227
17
85
56
52
61
63
33
14
365
34
1388

196 days) 1388 (7.1 minutes lost
1372
2120

7 minutes average
3
21 tons less capacity

6
7

3rd 36 =

179
24
141
118
62
71
33
66
135
53
324
181
71
46
242
106
66
111
52
52
59
41
178
61
2472

9
11

196 days) 2472 (minutes lost 12.6
196
512
392
1200
1176

12.6 minutes every [illegible]
3
37.8 tons lost

Oil ~~trouble~~ CP –

~~32~~
~~15~~
~~37~~
~~54~~
~~20~~
~~27~~
~~35~~
~~220~~

Hoppers in CP

144	43	31
8	322	
16	43	
92	47	
18	19	
204	24	
173	116	
54	276	
112	49	
32	312	
138	24	
65	49	
341	38	
47	129	
99		
1543	1491	

1543
1491
196) 3034 (minutes lost 15.4 minutes daily
196
1070
980
1044
978

15.4
3
46.2 tons

Car hoist to skip dump

56
15
89
11
105
61
17
26
492
22
122
34
950

227
58
31
25
63
283
79
766
950
1716

196) 1716 (8.7
1568
1480
1372

8.7
3
26.1 tons

Engine Room No 1

79
78
28
98
33
43
23
94
40
516

196) 516 (2.6
392
1,240
1,176

2.6
3
7.8 tons

Dryer No 1 - CP —

14
43
48
91
100
76
608
232
112
185
191
209
470
240
2619

196) 2619 (13.3
1969
6580
5891

13.3
3
39.9 tons lost

Capacity 60 tons hour

Feed Roll under Byou

20
50
14
196) 8.40 (.143
784
560

4/10ths of ton daily

Chalk Rolls - No 1 July 1

85
365
110
28
190
81
37
137
99
47
174
202
88
5550
2570
2430
41
730
424
4424
1427
365
1908
2998
556
1536
618
739
27789

12
12
9

196) 27789 (141 minutes
1968
814
784
349
392

141 minutes - at 30 tons hour

per roll - 70.5 tons daily loss

9 only paid record) No 1 Roll -

Eng No 2

61
115
157
178
107
90
163
60
460
58
246
124
111
75
41
228
58
389
63
115
85
41
145
3070

10
11
1

196) 3070 (15.6
196
1110
980
1300

60 tons hour
1 ton min

15.6 average minutes Daily
15.6 tons daily

Electrical Troubles –

25
80
108
316
48
56
53
51
60
90
87
1082
155
93
45
65
25
15
120
2576

7

196) 2576 – minutes
196
6180
58
28

13.1, minutes lost daily –

Blowoffs No 1 Blowers

30
23
4
12
17
25
196) 1118 (.56
980
1300

1/2 minute daily

Oil System Blowoffs

less than 1/2 minute
Daily

1st 36 Rolls Clinker C—

75
110
65
70
165
200
90
65
38
125
95
1440
86
310
725
75
3734

5
8

196) 3734 (19.
1964
1778
1760
2060

19 minutes daily

2nd 36 Rolls Clinker Cr

665
310
240
490
45
20
125
80
75
70
1225
2332
370
95
1440
100
255
725
270
8932

4
9
4

196) 8932 (45.5
784
1092
980
1120

45.5 minutes lost daily

Coal Crushing Rolls

340
~~2[illegible]5~~
~~[illegible]50~~
~~1002~~

425
51
125
270
50
765
430
100
115
235
525
55
50
3196

3
4

17.7 minutes lost daily

days 180) 3196 (17.7
180
1396
1260
1300

Blower House NO 2 -

40
59
105
52
45
75
19
59
454

Blowers only

196) 454 (2.3
392
620
588

2.3 minutes lost daily

Engine NO 3 — July

4
13
63
83
26
75
202
70
529
221
98
617
61
77
43
26
8 7
2216 7

196) 2216 (11.3
1960
2560
1960
600

11.3 minutes lost daily

Boiler Room ~

52
444
127
158
1613
460
422
997
3438
3821
4809
3143
1231
1135
539
356
1600 7
———
24295 7

445
4558
465
231
369
29
120 3
———
6217 3

124 minutes daily

196) 24295 (124
196
469
392
775
784

Conveyor 101

87
11
13
235
22
231
31
35
109
35
87
107
95
15 6
———
1113

196) 1113 (5.7
980
1330
1372

5.7 minutes at 3 tons min

5.7
3
———
17.1 tons daily loss to Plant Capacity.

Conv 102

9
5
115
13
84
65
34
284
141
191
65
63
76
37
116
1298

6
6

196)1298(6.6
1176
1220

6.6 minutes daily at 3 tons
3
19.8. Daily loss to C Plant
Capacity

Con 104

40
94
16
162
151
209
262
508
83
52
54
649
340
84
398
155
140
45
3442

7
9

196)3442(17.5
196
1482
1372
1100

17.5 minutes daily
3
52.5 = daily loss capacity to
CP

Con 109 –

70
138
70
142
256
155
302
1757
1484
40
1030
68
20
90
92
77
73
131
50
120
30
479
1232

5444

Oct 12 new heater –

||||

2.4
10.4

92 | 1232 (13.4
92
316.0
276
3

196) 5444 / 1232.6 (34
667
588
784
784

34 minutes lost daily
at 1 ton per min –
34 tons daily –
taking out 104 days after big heater
put in loss 13.4 minutes
daily or 13.4 tons daily
to Chalk plant

110 Con –

110
27
75
36
242
58
45
127
196
213
260
410
213
2012

196) 2012 (10.2
196
520

10.2 minutes lost daily
10.2 Tons loss output
10.2

111 Car -

576
670
22
329
377
264
419
23
130
72
504
130
633
9
170
63
75
181
141
913
545
170
161
117
38
18
6750

[illegible] 186) 6750 (36.3
558
1170
1116
540

3613 minutes daily
3613 tons Capacity

10
11

112 Car -

29
20
18
48
35
94
24
177
118
119
131
27
83
107
17
12
1059

196) 1059 (5.4
980
790
784

5.4 minutes daily
5.4 tons Capacity

113-Con Screw-Chalk plant.

Aug 15 To Jany 26

50
50
179
67

days 130)346(2.6
260
860
780

2.6 minutes daily loss to Chalk plant

11111

76/130

114-Screw-

298
45
298
20
9
146

196)816(4.1
784
32

196)816(

4.1 minutes lost daily to Chalk plant

~~Kilns~~

24

Conveyor 125

40
30
1205
270
175
60
517
957
2885
45
430
97
5877

days 186)5877(31.6
558
297
186
1110

31.6 minutes lost daily

31.6 minutes lost daily

Car no 126 —

30
90
140
45
510
60
270
55
530
290
558
3545
2465
20
2290
225
1015
150
1395
1260
1140

16083

196) 16083 (82
1568
403
4

4
10
5

82 minutes lost daily

82 5
5

No 1 Elev —

40
50
35
95
45
35

196) 300 (1,5
196
1040
980

1 1/2 minutes lost daily

128 — Chilled shoe scraper

285
245
490
395
25
105
120
75
195
20
70
20
2045

196) 2045 (10.4
196
850

10.4 minutes daily
Loss to Chilled [illegible]

---

130 - 36" belt, Cement Crusher

136
61
58
25
117
38
69
170
587
1336
610
36
526
120
3889

6

196) 3889 (19.8
196
1929
1764
1650

19.8 minutes Lost daily

Car 131

51
203
195
93
283
96
252
28
111
43
237
415
65

2072

5.
6.

196) 2072 (10.6
196
1120

10.6 minutes lost daily

132 –

284
270
323
39
1044
354
118
33
265
121
722
27
45
41
421
54
38

4199

6
6

196) 4199 (21.4
392
279
1960
83

21.4 minutes lost daily

Cm. 137

171
445
863
127
92
408
87
84
1270
55
81
520
158
1027
280
153
2012
31
80
73
90
136
747 6
8990 12/4

S. Damp Blower #6

196) 8990 (45.8
784 0
1150
980
17

45.8 minutes lost daily

S. S.

138 — Tunnel Blower # No 2

33
100
53
38
44
48
75
102
78
56
125
32
35
26
316
69
73 8
1303 7

196) 1303 (6.6
1176 0
127

6.6 minutes lost daily

139 – screw Con Blower #

151
349
157
422
80
57
57
58
1331

196) 1331 (6.7
1176
1550
1372
1780

6.7 minutes lost

140 – screw – Blow Ham No 2

12
280
16
24
138
473

196) 473 (2.4
392
810

2.4 minutes lost

Con. 143 - to Crescent Jlk Ht,

64
30
60
60
15
53

282

196) 282 (1.4
196.0
86

1.4 minutes (out)

144 Hendtta Crescent Pk Ht,

60
172
255
80
262
124
75

1028

196) 1028 (5.2
980.0
48

5.2 minutes (out)

Eugene Milk plant
Waiting for speed -

76
87
64
46
47
46
54
26
17
68
16
112
78
41
132
147
125
80
24
99

60
73
41
43
55
60
207
178
210
160
103
143
92
104
108
62
125
135
119

[illegible] 1905 -

128
89
91
165
56
92
58
35

Record missing

Car 99—

16
25
8
18
77
52
19
44
41
300

$196\overline{)300}(1.5$
196
1040

$1\frac{1}{2}$ minutes loss Capacity

C Plant

Changing Tripper RP—

104
92
87
196
32
34
112
43
38
55
467
152
27
38
46
33
52
19
68
158
1853

10
9

$196\overline{)1853}(9.4$
1764
890

9.4 minutes lost Changing tripper etc.

Chas Plant

Car 190

89
80
424
185
84
421
1283

196) 1283 (6.5
1176
1070

6.5 minutes lost

~~191 Cars~~

Quarry –

July 1 Dec 18 –

1111
26
104

122 days

Waiting for Cars

430
785
460
150
850
430
640
600
375
160
435
750
1598
2173
1590
1355
12781
16665
29446

1830
2970
1535
1975
2265
1875
2815
1400
16665

241
122
482
482
241
294.02

(24.13

days
122
244

) 29446
244
504
488
166
122
44

3
8
7

241 minutes lost daily –

Quarry

Cleaning Loading track

135
590
590
515
450
335
685
555
717
670
540
250
220
625
275
505
275
415
290
443

9080

450
430
443
220
490
170
500
315
487
315
175
500

4490

2
4

6
9

69 Minutes lost

9080
4490

196) 13570 (69.2
1176
1810
1764
46

Quarry

Moving Shovel

190
190
290
315
225
605
305
240
235
365
320
350
295
355
610
590
700
1055
310
372
452

8369

4
9
7

655
452
580
585
463
927
1020
500
475
315
770

6742

3
5
5

8369
6742

196) 15111 (77
1372
1391
1372

77 Minutes lost daily

Quarry
Shovel Repairs

85
405
375
40
40
240
40
70
260
190
30
80
350
250
255
605
95
290
3
10
3700

695
270
555
65
260
152
728
670
180
170
2
6
3745

3700
3745
7445
588
1565
1392
1730
196) 7445 (32.9

32.9 minutes lost daily

Quarry
~~Waiting~~
Laying Loading track
60

270
100
30
260
310
85
90
25
410
40
215
60
45
125
240
45
140
650
110
195
208
35
4
9
3748

110
250
35
515
85
115
45
240
465
85
230
100
50
385
4
6
2710

3748
2710
6458
588
578
575
196) 6458 (33.

33 minutes lost

Quarry
Wait for steam,

200
30
40
85
90
80
260
25
60
40
15
20
45
990

196) 990 (5
980

5 Minutes lost

Blasting

15
20
65
10
35
60
200
100
165
70
135
165
135
40
275
165
100
15
35
15
180
30
25
10
5
45
355
8
9
2570

196) 2570 (13
1960
610
588
220

13 minutes lost

Quarry
Waiting for Loco

75
110
20
15
20
115
150
105
90
20
70
5
85
35
15
40
30
60
40
5
40
40
45
1140

196) 1140 (5.9
980
1600

5.9 minutes lost,

Delays RR

cars switch	Cars off track	Hangers broke	Derailed	Drawheads on Car
5	12	6	25	
7	40	6		
4	63	12		
4	5			
20	13			
	16			
	149			

Loco [illegible] Coupler	Brakebeam on Car	Congested track	Cars stuck	Links pulled apart
4	4	24	3	9
		15	18	
		30	21	
		28	15	
		6	19	
		103	76	
	Drilling car			Cars stuck on switch
	12			15
				7
				7
				29

17
179
12
178
57
196 | 373 (1.9
196
177

Chute	Coupling up	Hopper	Loose plates	Cable		Shear	Uncoupling	Choked	Belt	Sheave	Bearing	No air	Grease cups
60	25	30	82	90	60	10	115	25	52	10	135	2993	3
23	38	52	55	33	47	19	10	27	18	1289	475		
	10	31		36	88	17	20	28	11	71	242		
	42	26		37	71	15	25	15	33	135	3075		
	10	52		50	132	32	60	122	24		200		
	40	5		57	75	28	10	1470	72		286		
	25			22	108	7	10	13	37		30		
	37			102	130	67	25		66		60		
	17			147	91	18	152		258		20		
	15			63		162	47		23		70		
	24			28		26	20		5		1680		
	15			41		112	5		85		575		
	22			128			22		50		24		
	32			85			15		120				
	25			25			25		9				
	27			83					10				
	20			89					153				
	20			130					50				
	12			37					328				
	16			39					43				
	15			138					74				
	44			44					26				
	20			103									
	20			56									
	18			45									
				36									
				115									
				73									
				51									
				23									
				35									
				23									
				153									
				144									
				37									
	590	482		2318	798	511	422	1900	1625 8	1505	6871		

air piston
87
30

422
590
1012

Collar	Retaining plate	Plates	Starting	Springs	Bushings	Housings	Drive pulley	No of [illegible]	oil pipe	Slag [illegible]
2470	35	3150	33	1340	1398	40	1127	2993	25	445
2570		~~720~~	31	1265	2436	55	Girder	2993	10	
2396		~~420~~	148	690	Shear Bushing		360	She-		
7436		~~3500~~	53	3295	175		273			
		3150	595		2		2442			
		2017	13		4009		3077			
		160	873		Shaft					
		1193			153					
		687								
		250								
		350								
		350								
		350								
		350								
		350 1								
		350 6								
		350 3								
		9877								

21 | 9872 (470
84
147
147

No 1 Clinker Grinder

Coupling + uncoup	Cable	Cable	Shears	Hopper Chute	Plates	Belt	Sheave	Spacing Roll	Bolts	Loose plates	Thrust Collar	Piston	Roll	Bearing	Retaining plate	Collar	Housings
30 26 52 40 130 20 37 20 10 20 25 20 20 70 44 31 11 15 74 27	50 178 54 75 97 85 30 102 110 65 31	45 43 89 38 78 33 94 69 29 78	47 99 27 8 30 23 21 17 86 27 43	100 10 10 7 400	1696 720 402 425 250 350 220 163 300 244 320 596	33 36 35 63 55 51 84 90 273 32 52 15 90 73 18 45 45 15	107 84 107 149 20 50	1892 2313 26 1410 776 75	68 35 17 17 45	53 67	470 665	25	607	535 393 15 1088	206	26	28 6 12 16 50
722	877	596	427	527	5686	1105	517	7692	192	120	1135			2031			112

New bush Jackshaft	Ring Packing	Plug bearing	guides	Starting	Springs	Bushings
1275	53 42	40	719 3600	43 25 181	260	1075 3380 15100 2660 271
	97		4319	249		22486

115 items

Oct 3 to oct 13 No 1 not running 10 days
new bushings—
from Dec 12 to Dec 19 new bushings — 7 days
Dec 22 to 26 —— " 4 days —

21
14
4
8
29

Chalk

—666

Loss daily				Hours Lost			Hours
C Plant	7	1500	244.5	4.4	49%	157.3	2. 36 min
Chalk		400	249.3	4.9	22%	127.4	2. 7 "
Clinker Crusher		50	183.0	3.3	14%	53.0	53 min
Cement grinding		250	362.4	6.2	28%	120.0	2. 00
Quarry			475.0	8.0	80%	246.0	4.6
~~R~~R.			1.8	1.8		0 0	0 0
Kiln			240.0	4.0	17%	56.0	2. 36 min
Pkg -						959.7	

60) 1915.0 (31.9
180
115
60
550

2.39

60) 959.7 (16.
60
359

C.P. Grinding Rock	123.0
Skip H + Dump -	6.7
Dryer -	3.0
Grinds + Hoppers	11.6
Bin plant	13.0
	157.3

Quarry - Enough cars & skips so there is no waiting for Cars — will have 150

Crushing Plant.

50 or greater HP Motor on No 4. bearings and less drop of Volts on Line,
Stronger Chain & less repairs on tripper

1 2 & 3rd 36 Rolls, better Wobblers,
Dont send so many large chunks from Quarry
12.8, minutes lost every day from this cause alone, or 7 skips daily-
gears on skip dump not strong enough—
See that Exhaust fan at Dryer always has power & also that the fan blades are renewed out of mill time, by having it done nights, or use of an extra wheel—
14 minutes lost daily. —Extra wheel bought & stored at Dryer-

Have sufficient Skips & Cars so mill never waits for Rock. 123 minutes saved daily which at 180 Tons hour is 360 Tons increased Output daily -

~~Chalk Plant~~

Flexible shaft, Drive + head drives generally Shafts - pinion + Bearings of heavy Conveyors too light + Cause lots of delay - Should be changed.

New Rolls in Chalk + Clinker grinding large bearing surfaces, plenty oil - Wider drive/belts - No shear pins -

Chilled bushings in wheels + on shaft. 125 + 126 Conveyor -

132 Conveyor put in new way -

Big Ceasar taken out + fixed screws put in -

Quicker + more convenient methods devised for changing plates on fine grinders -

Aprons fixed on Kilns =

Too much loss time on Generator Coal plant.

From studying beltwear, I think wear will be greatly diminished if very fine stuff is first got on belt before coarse stuff is dumped on –

Feed screws tube will stick, plug & break too much,